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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/766,135	01/19/2001	Tue Nguyen	SIM012C	1953

7590 08/21/2003
Tue Nguyen
496 Olive Ave.
Fremont, CA 94539

EXAMINER

FUQUA, SHAWNTINA T

ART UNIT	PAPER NUMBER
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3742

DATE MAILED: 08/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/766,135

Applicant(s)

NGUYEN ET AL.

Examiner

Shawntina T. Fuqua

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 January 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 41-47 is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☒ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 January 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3. 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "lamp heater and non-heated workpiece support" of claims 30 and 47, the "replaceable shield of comparable weight as the workpiece" of claim 41, and the "shield aligner" of claim 27 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 182 and 187. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

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The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

4. The abstract of the disclosure is objected to because it repeats information in the title, it contains phrases which can be implied, and it is more than 150 words.. Correction is required. See MPEP § 608.01(b).

5. 35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms which are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or verbose terms used in the specification are: "transmitivity" used numerous times throughout the specification, and "transmittivity" used numerous times throughout the preliminary amendment. For purposes of examination, the examiner assumes the applicant meant to use "transmissivity".

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

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evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 21-29, and 32-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohmine et al (US5991508) in view of Guo et al (US6096135).

Ohmine et al discloses a multi-thermal zone shielding apparatus comprising a heater (4) to heat the workpiece (1), a multi-thermal zone shield (6a, 6b, 6c, 6d; Figures 5a-5c) comprising a low thermal transmissivity section (6b, 6d) proximately positioned near the workpiece (6b, Figure 5b), a high thermal transmissivity section (6a, 6c) coupled to the low thermal transmissivity section (6b, 6d) and extending away from the workpiece (6a, Figure 5b), shield is made of a transparent material wherein the low thermal transmissivity section is opaque and the high thermal transmissivity section is made of quartz (column 11, lines 58-67; column 12, lines 24-44), a shield aligner (2), a movable shaft (2, 5), a non-heated workpiece support (Figure 1), an actuator (5). Ohmine et al does not disclose a shield positioned above the workpiece, covering an engaged portion of the workpiece to prevent processing on the engaged portion of the workpiece, a heater positioned below the workpiece, a shield support to support the shield so that the shield and the workpiece are spaced apart when the workpiece is disengaged, a heated workpiece support having a heated top surface, a cavity defined by the heated workpiece support, the workpiece, and the shield wherein the cavity is adapted to retain a non-reactive gas in the vicinity of the shielded portion of the workpiece, the shield stays close to the workpiece so that the cavity has no large leak and the non-reactive gas is in the vicinity of the circumferential edge

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of the wafer. Guo et al discloses a shield (110, 112) positioned above the workpiece (Figure 1), covering an engaged portion of the workpiece (Figure 4) to prevent processing on the engaged portion of the workpiece (column 4, line 17-column 5, line 15), a heater (103) positioned below the workpiece, a shield support (84) to support the shield so that the shield and the workpiece are spaced apart when the workpiece is disengaged (Figure 1), a heated workpiece support (102) having a heated top surface, a cavity defined by the heated workpiece support, the workpiece, and the shield wherein the cavity is adapted to retain a non-reactive gas in the vicinity of the shielded portion of the workpiece, the shield stays close to the workpiece so that the cavity has no large leak and the non-reactive gas is in the vicinity of the circumferential edge of the wafer (column 4, line 17-column 5, line 15). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the shield of Ohmine et al to include the shape of Guo et al because, a shield which engages and covers a portion of the workpiece prevents edge and backside deposition of the workpiece.

9. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohmine et al in view of Guo et al as applied to claim 21 above, and further in view of Blersch et al (US5965047) or Tanaka et al (US6036782).

Ohmine et al in view of Guo et al discloses all of the recited subject matter except a lamp heater. Both Blersch et al and Tanaka et al disclose a shield (52, 86 of '047; 38, 60 of '782) heated via a lamp heater (Figure 2, of '047, 46 of '782). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the lamps of Blersch et al or Tanaka et al in the apparatus of Ohmine et al along with the shield shape of Guo et al

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because, lamps allow the heating process to be controlled more efficiently because they are able to be turned on/off more quickly.

10. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohmine et al in view of Guo et al and Blersch et al or Tanaka et al as applied to claims 21 and 30 above, and further in view of Cheng et al (US5304248).

Ohmine et al in view of Guo et al and Blersch et al or Tanaka et al discloses all of the recited subject matter except a workpiece support with a tapered outer edge and a shield with a tapered inner edge of a similar angle so that the shield and support can be aligned in the engaged position. Cheng et al discloses a workpiece support with a tapered outer edge and a shield with a tapered inner edge of a similar angle so that the shield and support can be aligned in the engaged position (Figures 2, 3, 6). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the tapered edges of Cheng et al because, the angled edges ensure that the shield and support are properly aligned.

Allowable Subject Matter

11. Claims 41-47 are allowed.

12. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record neither discloses nor suggests a replaceable shield of comparable weight as the workpiece for allowing replacement of the shield in the same way as the replacement of the workpiece.

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Terminal Disclaimer

13. The terminal disclaimer filed on 7/11/03 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of U.S. Patent No. 6,221,166 has been reviewed and is accepted. The terminal disclaimer has been recorded.

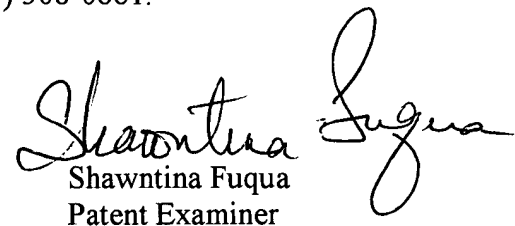
Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shawntina T. Fuqua whose telephone number is (703) 305-2581. The examiner can normally be reached on Monday-Friday 8-4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Teresa Walberg can be reached on (703) 308-1327. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9302 for regular communications and (703) 872-9303 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0861.

stf
August 15, 2003


Shawntina Fuqua
Patent Examiner

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